

### ABSTRACT OF THE DISCLOSURE

The present invention provides a load lock having a vertically movable lid, an internal robot, and a wafer lifting mechanism and further provides a method of transferring wafers through a load lock directly to a process chamber. An atmospheric transfer robot shuttles wafers to and from the lifting mechanism while the lid is raised and the lifting mechanism then transfers wafers to and from the internal robot. The load lock is directly attached to a process chamber and communicates therewith via a slit valve which is selectively opened and closed. The internal robot is extended and retracted through the slit valve aperture in order to transfer a wafer to and from the process chamber. In one embodiment the lifting mechanism is comprised of vertically movable lift pins disposed through the bottom of the load lock. In another embodiment the lifting mechanism includes two pairs of lift forks disposed through the cover of the load lock. Each pair of forks is capable of independent rotational and vertical movement and each pair is adapted to handle a single wafer.

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